UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/595,600	04/28/2006	Martin Saeterbo	BRYN/0015	3324

26290 7590 10/24/2008

PATTERSON & SHERIDAN, L.L.P.
3040 POST OAK BOULEVARD
SUITE 1500
HOUSTON, TX 77056

EXAMINER	
SWINNEY, JENNIFER B	

ART UNIT	PAPER NUMBER
3724	

MAIL DATE	DELIVERY MODE
10/24/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/595,600	SAETERBO ET AL.	
	Examiner	Art Unit	
	JENNIFER SWINNEY	3724	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 April 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16 and 18-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16 and 18-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 April 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *4/28/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

Claim Objections

2. Claims 18-23 are objected to because of the following informalities: Claims 18-23 are improperly numbered, and should be numbered as claim 17-22. The current specification omits claim 17, with claim 18, immediately after claim 16. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-16 and 18-23 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The term "locator device (locator sleeve)" is not supported by an enabling disclosure. It is unclear what structure allows this device to perform a locating function. The essential goal of the description of the invention requirement is to clearly convey the information that an applicant has invented

the subject matter which is claimed. *In re Barker, 559 F.2d 588, 592 n.4, 194 USPQ 470, 473 n.4 (CCPA 1977).*

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In Reference to claim 20, the phrase "for example" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

The following rejection was made as best interrupted of the claimed subject matter.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1-4, 8-10, 13-16, and 18-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Application Publication No. 2002/003083 to Claesson et al. (Claesson) in view of US Patent Application Publication No. 2002/0083805 to Lundblad et al. (Lundblad) and in further view of US Patent No. Patent No. 5,913,955 to Redmond et al. (Redmond).

Claims 1-4, 8-10, 13-16, and 18-23 were rejected as best interrupted by the claimed subject matter.

Claesson teaches a device (Fig. 1) for vibration damping and or/controlling the flexion of an object in machining, wherein the object is a tool, tool holder, or workpiece which comprises at least one force exchange device (piezoelectric actuator, Fig. 2, 26,27), operative to exchange a force having a force component having a force component directed at a right angle while parallel to the surface object (Fig. 1, Pg 2, Para 0027); or exchanging a movement between the object and device (Pg. 3, 0031, it is noted, although Fig. 2 and Fig. 5 are different embodiments, the tool holder and actuators of Fig. 2 are capable of functioning as described by Fig. 5); a force transmission device (Fig. 1, Pg. 2, Para 0027, see below) positioned between a force exchange device (Fig. 2, 26,27) and an object (Fig. 2,22); a force exchange device (Fig. 2, 26,27) disposed between a clamp (Fig. 2, 23) and the object (Fig. 2,22); a control unit (Fig. 2,28, Pg. 2, Para 0028) for regulating input to an actuator; a sensor (Fig. 2, 24,25) disposed on or in the object for detecting vibrations; a device is modular and permits different dimensions and geometrical configurations of the object (Fig. 2,21, inserts are known to be interchangeable and comprise of various shapes). Claesson teaches the use of a sensor, but does not explicitly teach the use of an accelerometer sensor. It is further noted, Claesson does not teach a force exchange device external the surface of the object, a locator device.

Lundblad teaches a force exchange device external the surface of the object (Fig. 1, 8, Pg. 3, Para 0040) and a force exchange device attached to a locator device (Fig. 4, 2), a force exchange device (Fig. 4,8) disposed between a force transmission device (Fig. 4, 1) and locator device (4, 2), a force transmission device (Fig. 1,4) and a

force exchange device (Fig. 4, 8) are positioned in the locator device (Fig. 4, 2); actuators being controlled passively (Pg. 1, Para 0010).

Redmond teaches it is known to use accelerometers sensors to provide information to determine the magnitude of the internal moment required to damp the vibrations being produce. Redmond also teaches actively controlled actuators using an algorithm (Col. 5, lines 5-10) and an actuator for applying force for applying a moment (Col. 3, lines 4-10), and an actuator for absorbing vibrations from an object (Col. 3, lines 15-21).

It would have been obvious to one having ordinary skill in the art at the time of invention to position the force exchange device, external to the surface of the object in an area, in which, the maximum axial elongation occurs during bending in order to control vibrations as deformation occurs as taught by Lundblad. It would have further been obvious to place the force exchange device near a locating device near the root of the bar to prevent potential interference with the tip of the tool and to use an accelerometer sensor for communicating the required damping information. Controlling vibrations is essential to reducing noise, wear and creating uneven surfaces. It is further noted, the claim would have been obvious because a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense.

Additional interpretation of claim 1.

9. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,913,955 to Redmond et al. (Redmond) in view of US Patent Application Publication No. 2002/0083805 to Lundblad et al. (Lundblad).

Redmond teaches a device (Fig. 1) for vibration damping and or/controlling the flexion of an object in machining, wherein the object is a tool, tool holder, or workpiece which comprises at least one force exchange device (Fig. 1, P1), operative to exchange a force having a force component having a force component directed at a right angle to the surface object (Fig. 1, F1, Col. 3, lines 5-7, Col. 5, lines 24-27); or exchanging a movement between the object and device (Col. 5, lines 33-35). Redmond does not teach a force exchange device external the surface of the object or a force exchange device attached to a locator device surrounding the object.

Lundblad teaches a force exchange device external the surface of the object (Fig. 1, 8, Pg. 3, Para 0040) and a force exchange device attached to a locator device (Fig. 4, 2

It would have been obvious to one having ordinary skill in the art at the time of invention to position the force exchange device external to the surface of the object in an area in which the maximum axial elongation occurs during bending in order to control vibrations as deformation occurs as taught by Lundblad. It would have further been obvious to place the force exchange device near a locating device near the root of the bar to prevent potential interference with the tip of the tool, counteracts the vibrations produced by machining. It is further noted, the claim would have been obvious because a person of ordinary skill has good reason to pursue the known options within his or her

technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense.

10. Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Application Publication No. 2002/003083 to Claesson et al. (Claesson) in view of US Patent Application Publication No. 2002/0083805 to Lundblad et al. (Lundblad) and in further view of US Patent No. Patent No. 5,913,955 to Redmond et al. (Redmond) as applied to claim 1 above, and further in view of US Patent Application No. 2005/0223858 to Lu et al. (Lu).

Claesson teaches a device (Fig. 1), but does not teach an elastic material disposed between the force transmission device and the locator device.
Lu teaches an elastic material (Fig. 3, Para 0061) disposed between a force transmission device (Fig. 3, 109) and a locator device (Fig. 3, 107). Lu does not explicitly teach the elastic material disposed between the devices are rubber.

It would have been obvious to one having ordinary skill in the art at the time of invention to incorporate an elastic material between the locator device and force transmission device in order to providing an additional damping source to absorb the vibrations produced during machining. It would have further been obvious to one having ordinary skill in the art to utilize a material with property characteristics suitable for damping, such a rubber. Therefore, the claim would have been obvious because a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense.

11. Claims 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Application Publication No. 2002/003083 to Claesson et al. (Claesson) in view of US Patent Application Publication No. 2002/0083805 to Lundblad et al. (Lundblad) and in further view of US Patent No. Patent No. 5,913,955 to Redmond et al. (Redmond) as applied to claim 1 above and further in view of US Patent No. 5,558,477 to Browning et al. (Browning).

Claesson teaches a force exchange device (Fig. 2, 26,27), positioned in the clamp (Fig. 2, 23) of the object (Fig. 2,22), which exchanges a moment, but does not teach a force exchange device exchanges a moment provided by a connector part.

Browning teaches a force exchange device (Fig. 1,17) exchanges a moment by a connector part (Fig. 1, 15, Col. 2, lines 43-46).

It would have been obvious to one having ordinary skill in the art at the time of invention to incorporate a connector as taught by Browning in the invention of Claesson to translate a moment from the force exchange device to the tool bit for machining. It is known to utilize a piezoelectric exchange device to control the damping of the overall system. It is further noted, the claim would have been obvious because a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patent No. 3,207,009 teaches vibration damping device, an

object, a tool holder and a cutting element. US Patent No. 6,202,521 teaches an object, a piezoelectric actuator, sensors, a control system, a tool bit. US Patent No. 6,694,213 teaches an object, a sensor, a control system, an actuator, a tool bit.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JENNIFER SWINNEY whose telephone number is (571) 270-5843. The examiner can normally be reached on Monday-Friday, 7:30 am-5:00 pm EST.

14. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Boyer Ashley can be reached on (571) 272-4502. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

15. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jason Daniel Prone/
Primary Examiner, Art Unit 3724

/JS/